

# PATENT SPECIFICATION

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## (54) IMPROVEMENTS IN OR RELATING TO TRUNKING FOR ELECTRIC CABLES

(71) We, SIMPLEX POWER CENTRE LIMITED, formerly Power Centre Company Limited, a British Company of Brookside, Wednesbury, in the County of Stafford, do hereby declare the invention for which we pray that a patent may be granted to us and the method by which it is to be performed to be particularly described in and by the following statement:—

10 This invention relates to trunking for electric cables and is particularly concerned with the provision of means whereby pieces of trunking may be connected together in end to end relationship.

15 An object of the present invention is to provide improvements in trunking for electric cables.

20 According to the present invention, we provide coupling means for joining pieces of electrical trunking in end to end relationship, comprising a locating member formed so as to be engageable with and to locate said pieces in end to end relationship, and a retaining member capable of engaging both  
 25 pieces by formations which are spring biased into retentive engagement with said pieces.

30 The locating member preferably comprises locating wall portions, which, in use, overlap walls of said pieces of trunking engaged with said locating member and a further wall portion which affords stops of the ends of said pieces of trunking, said further wall portion conveniently bounding  
 35 an opening in which a body portion of a retaining member is received, the retaining member being made of resilient material and having a pair of arms projecting in opposite directions from said openings in  
 40 overlapping relation with said locating wall portions.

45 Preferably the formations engageable with said pieces of trunking are provided on said arms and project towards said locating wall portions.

Conveniently the resilient retaining

member is made of electrically conductive material so that engagement between the walls of the pieces of trunking and said formations can provide electrical continuity  
 50 between said pieces of trunking.

The invention will now be described by way of example with reference to the accompanying drawing in which:—

55 Figure 1 is a view in broken perspective of two pieces of channel-section trunking joined together by means of a coupling means,

60 Figure 2 is a detail perspective view of an alternative form of retaining member to that shown in Figure 1,

Figure 3 is a detail perspective view of yet another form of retaining member and

65 Figure 4 is a detail perspective view of yet another form of retaining member.

As shown in Figure 1, two pieces of channel-section trunking 10 are joined together in end to end relationship by the coupling means comprising locating member 11 used in conjunction with  
 70 retaining means in the form of spring biased retaining members 12. The locating member 11 is of channel-section configuration to afford three locating wall portions and the dimensions of the internal surfaces thereof  
 75 correspond to the dimensions of the external surfaces of the pieces of channel-section trunking 10. Each wall of the locating member 11 presents an inwardly-displaced further wall portion 13 which,  
 80 together with the wall from which it is displaced, defines an opening 14 in which a central body portion 23 of one of the retaining members 12 is received and from  
 85 which opening a pair of arms 24 of said retaining member project in opposite directions. In use, the pieces of trunking 10 are located within the locating member 11 with the portions 13 interjacent the ends of the pieces of trunking 10 and said ends of the trunking 10 being received between the  
 90 arms of the retaining members 12 and the

wall of the coupling member 11, so that the arms overlap the locating wall portions as will be apparent from Figure 1.

Each retaining member 12 is made from electrically-conductive resiliently deformable metal, for example spring steel, and is of elongated configuration, being approximately equal in length to the axial width of the coupling member 11. The transverse displacement of the portion 13 from the wall of the locating member 11 is smaller than the total added thickness of a wall of a piece of trunking 10 plus the thickness of a retaining member 12 so that, when a piece of trunking is inserted between the end of a retaining member 12 and the wall of locating member 11, the end of the retaining member 12 is stressed, and thus is spring biased into retentive engagement with the corresponding wall of the trunking 10.

In order to assist further the engagement of the ends of the retaining members 12 with the corresponding walls of the trunking 10, each retaining member shown in Figures 1 and 2 is formed with a pair of projecting formations in the form of barbs 15 adjacent its ends, which barbs are urged into engagement with the wall of the trunking 10 to fix the trunking relative to the locating member 11 and, in addition, have abrasive engagement with said wall to ensure that there is electrical continuity between the pair of pieces of trunking 10 are joined by the coupling member 11.

As shown in Figure 1, each retaining member 12 is formed with a holding means provided by a pair of stop dogs 16 in the form of pressed out lugs which are spaced apart by a distance corresponding to the width, measured axially, of the portions 13 so that, when the pieces of trunking are joined together by the locating member in end to end relationship, the retaining members 12 are fixed to the stop dogs 16 relative to their associated portions 13.

In Figure 2, there is shown an alternative means for fixing the retaining member 12 relative to its associated portion 13 of the locating member 11. In this case, the retaining member 12 is formed intermediate the ends thereof with a raised portion or projection 17 which, when the pieces of trunking 10 are joined together by the locating member 11 in end to end relationship, is received in an aperture 18 formed within the associated portion 13 of locating member 11. Alternatively the raised portion or projection 17 could be provided on the portion 13 and the aperture 18 could be formed in the retaining member 12.

An alternative form of retaining member 12 shown in Figure 3 has at each end thereof a raised portion 19 which, when the pieces of trunking 10 are joined together in end to

end relationship by the locating member 11 in the manner shown in Figure 1, is each received in an aperture 20 formed adjacent the end of each piece of trunking 10.

A similar form of retaining member 12 to that shown in Figure 3 is shown in Figure 4, this retaining member having, at each end thereof, a centrally-located barb 22 which, when the pieces of trunking are joined together by means of the locating member 11, is received in an aperture 21 formed adjacent the end of the trunking 10.

In all of the embodiments of the retaining member 12 shown in the accompanying drawing, the ends of the retaining member are cranked inwardly to facilitate the insertion of the end of a piece of trunking 10 between the corresponding end of retaining member 12 and the wall of locating member 11 and are so shaped as to prevent damage to cables housed with the trunking.

In order to join together two pieces of trunking 10, each retaining member 12 is located with the intermediate portion thereof in its associated aperture 14; one piece of trunking 10 is inserted between the adjacent ends of retaining members 12 and the wall of locating member 11 and pushed axially until the end of the trunking 10 abuts the portion 13; and then the other piece of trunking 10 is inserted between the other ends of retaining members 12 and the wall of locating member 11 and is pushed axially until the end thereof abuts portion 13, so that the portion 13 forms stops for the ends of the pieces of trunking.

It will be apparent that the raised portions 19 and barbs 22 and their respective apertures 20, 21 formed adjacent the end of each piece of trunking 10 in the embodiments illustrated in Figures 3 and 4, will be arranged so that, when the end of both pieces of trunking 10 abut portion 13, the raised portions 19 or the barbs 22 will engage their respective apertures 20, 21 thereby fixing the pieces of trunking 10 against relative movement to one another.

In a further embodiment (not shown) each resilient retaining member can be secured intermediate its ends to the locating member 11 by riveting as opposed to being removably attached thereto.

In the illustrated embodiments we have shown a single retaining member 12 in association with each wall of the channel-section trunking 10 but it will be appreciated that there may be more than one retaining member 12 associated with each of these walls particularly in cases in which the dimensions of the piece of trunking are large. Furthermore, in cases in which the dimensions of the pieces of conduit are small only one retaining member 12 need be used to join together the pieces of trunking.

The invention has been hereinbefore

described in relation to trunking of channel-section but is equally applicable to trunking of other configurations.

5 An alternative embodiment of the invention employs retaining members which are, by appropriate adaptation of the locating member, located externally of the pieces of trunking which are connected together by the locating member and  
10 retaining members.

WHAT WE CLAIM IS:—

1. Coupling means for joining pieces of electrical trunking in end to end relationship, comprising a locating member formed so as to engageable with and to locate said pieces in end to end relationship, and a retaining member capable of engaging both pieces by formations which are spring biased into retentive engagement with said pieces.  
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2. Coupling means as claimed in Claim 1 in which the locating member comprises locating wall portions which in use, overlap walls of the pieces of trunking engaged with said locating member and a further wall portion which affords stops for the ends of said pieces of trunking.  
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3. Coupling means as claimed in Claim 2 in which said further wall portion bounds an opening in which a body portion of the retaining member is received said retaining member being made of resilient material and having a pair of arms projecting in opposite directions from said opening.  
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4. Coupling means as claimed in Claim 3 in which said arms overlap said locating wall portions and are provided with the formations engageable with said pieces of trunking to retain said pieces of trunking.  
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5. Coupling means as claimed in claim 4 in which said formations comprise projections, formed by deforming positions of the retaining member.  
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6. Coupling means as claimed in any of claims 3 to 5 in which holding means is provided for holding a body portion of the retaining member against movement relative to the locating member.  
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7. Coupling means as claimed in Claim 6 in which said holding means comprises a  
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pair of spaced stop dogs on the retaining member which engage edges of said further wall portion.

8. Coupling means as claimed in Claim 6 in which said holding means comprises a projection on the retaining member which engages in an aperture formed in said further wall portion or a projection on said further wall portion which engages in an aperture formed in said retaining member.  
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9. Coupling means as claimed in any one of the preceding claims which includes a plurality of retaining members.

10. Coupling means as claimed in any one of the preceding claims in which the or each retaining member is of an electrically-conductive material.  
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11. A pair of pieces of electrical trunking in combination with coupling means as claimed in any one of the preceding claims, said pieces being located in end-to-end relationship by the locating member with walls of said pieces engaged by the formations on the retaining member.  
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12. The combination claimed in Claim 11 in which said formations engage in apertures formed in said walls of said pieces of trunking.  
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13. Coupling means substantially as hereinbefore described with reference to, and as shown in, Figure 1, 2, 3 or 4 of the accompanying drawing.  
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14. The combination as claimed in Claim 11 substantially as hereinbefore described with reference to, and as shown in, Figure 1 or 2 of the accompanying drawings.  
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15. The combination as claimed in claim 12 substantially as hereinbefore described with reference to, and as shown in, Figure 3 or 4 of the accompanying drawing.  
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